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FLOWCHART-BASED CONTROL SYSTEM INCLUDING AUTOMATIC DOWNTIME AND CYCLE TIME ANALYSIS

ABSTRACT OF THE DISCLOSURE

A flowchart-based programming and control system includes a computer with a processor, memory, and display. A device is connected to the computer and is associated with a process. A flowcharting module run by the computer generates and edits flowchart source code that includes flowchart blocks and that contains logic for operating the device to further the process. First and second flowchart blocks assign an operational state of the process. A reason code module associated with the flowcharting module assigns first and second reason codes to the process by the first and second flowchart blocks. The flowchart module compiles the flowchart source code into flowchart object code. A flowchart run-time engine module associated with the computer executes the flowchart object code to control the process. The flowchart object code generates the first and second reason codes during execution of the first and second flowchart blocks in the flowchart object code. A performance analysis module and a charting module record and graphically represent the operational state of the process over time. The performance analysis module can be updated periodically or in real time. The graphs, charts and data provided by the performance analysis module can also be accessed remotely using a browser.